The Citrus Industry
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Representing no special interest

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Fifth Annual Farmers' and Fruit Growers' Week

Will be Held This Year on August 9 to 14, at Gainesville, College of Agriculture, University of Florida

Announcement has been made of the Fifth Annual Farmers' and Fruit Growers' Week to be held at the Agricultural College, University of Florida, Gainesville, during the week of August 9 to 14.

Farmers' and Fruit Growers' Week is designed to bring together farm men and women, in vacation time, to mingle together, get better acquainted, exchange experiences, gather new ideas from each other and from teachers and scientists of long experience, and promote better agricultural conditions throughout Florida. All lectures and demonstrations will be free.

Accommodations and Expenses

Rooms in the dormitories, including meals at the University dining room, may be secured at $1.40 per day, provided the Dean of the Agricultural College be notified in advance. Those taking advantage of this rate must bring pillows, bed linen and towels. Rooms and meals convenient to the campus may be had at reasonable rates, also the hotels of Gainesville have ample accommodations. The Committee is making provision for a large attendance.

Courses Offered

FARM CROPS. Farm management, rotations, grass and forage crops, cotton culture, and farm mechanics.

ANIMAL HUSBANDRY. Beef and swine production, diseases and farm sanitation.

DAIRYING. Selection of dairy cattle, handling milk and butter, correct feeding, judging demonstrations, and marketing problems.

POULTRY. Breeding, feeding, housing, diseases and parasites, and marketing poultry products.

CITRUS CULTURE. Fertilization cover crops, cultivation, pruning, disease and insect control and economic grove management.

SMALL FRUITS AND PECANS. Varieties, Culture, pruning, harvesting and marketing blueberries, blackberries, grapes and other small fruits and pecans.

TRUCK CROPS. Seedbeds, seed treatment, production, varieties, fertilization, disease and insect control and marketing of vegetables crops of Florida.

HOME ECONOMICS. A full week's program directed by the State Home Demonstration Staff is provided for women, including poultry, cookery, food preparation, nutrition, household management and conveniences, clothing and beautifying the home and its surroundings. Women desiring to take advantage of other programs are cordially invited to do so.

Arrangement of Courses

One may take a special line of work throughout or divide the time as he sees fit. Daily programs will give opportunity to know in advance what will be given in each line of work at any hour of the day.

INSTRUCTORS. Agricultural College faculty, Experiment Station, Extension Division and Plant Board staffs. In addition prominent speakers and scientific experts from the United States Department of Agriculture and other institutions will discuss questions applicable to farm life.

ENTERTAINMENT will be a special feature each day—music, motion pictures and popular lectures. One afternoon will be used for a picnic at a beautiful spring where facilities for bathing and other amusements are excellent.

The night programs will be entirely entertainment and held in the new University Auditorium, giving everyone the privilege of enjoying the new Dr. Anderson Memorial pipe organ.

Final Suggestions

Printed programs will be issued 10 days in advance of the meetings. A supply will be placed in the offices of County and Home Demonstration Agents and State Plant Board Inspectors.

On reaching the campus, report to headquarters at the College of Agriculture, register, and secure detailed information.

Those who contemplate attending should notify the COLLEGE OF AG-

Continued on page 24

New Material for Citrus Fumigation

By H. J. Quayle, Citrus Experiment Station, Riverside, Cal.

Reprint from California Citrograph

In view of the interest being shown by Florida growers in the subject of fumigation The Citrus Industry takes pleasure in presenting the accompanying article by H. J. Quayle of the Citrus Experiment Station at Riverside, California. Fumigation was first introduced among the growers of Florida by the American Cynamid Company, under the direction of Mr. R. W. Kelly with headquarters at Orlando. about two years ago. During these two years many experiments have been carried on throughout the state and fumigation is being practiced by a number of growers. The California Cyanide Company is now entering Florida for a series of experiments with a view to entering this field. Mr. V. I. Safro, Chief Entomologist for the California Cyanide Company and staff have established headquarters at Orlando and will make a number of tests in Florida groves, the first Holly Hill Groves at Davenport, Florida, Should these experimental tests prove that the product is successful under Florida conditions the California Cyanide Company will actively enter the field.

For the past several months the writer has been co-operating with the California Cyanide company in carrying on experiments and tests with a new fumigating material. This material is a new product of manufacture which was discovered by the chemists of that company and first reported upon by them in the February, 1926 issue of **Industrial and Engineering Chemistry.** It is a calcium cyanide which is formed by combining liquid hydrocyanic acid and calcium carbide. The product is an extremely fine powder which may contain as much as 50 per cent cyanogen. For fumigating purposes it is diluted with an inert material so as to contain 30 per cent cyanogen.

The writer having been previously interested in dust fumigation at once undertook studies to determine the possibilities of this new fumigant. Earlier experience with another calcium cyanide compound indicated that under Southern California conditions it was injurious to the citrus tree. Consequently one of the first things to do with the new product was to determine its action on citrus foliage under conditions conducive to injury such as is brought about by moisture. Early last fall trees were sprayed with water before and after dusting, but no injury occurred. Since that time considerable field experience has shown that the new material is safe under any conditions of ordinary fumigation.

Another important factor where the evolution of the gas is dependent upon atmospheric conditions is the rapidity of evolution. The product under discussion is very satisfactory in that respect. Where it is blown under the tent as in citrus fumigation more than 90 per cent of the gas is liberated in five minutes and 98 to 99 per cent of the total gas is liberated at the end of the 45-minute period of exposure. Having on injurious product, aside from the hydrocyanic acid itself, and having the property of giving off its gas rapidly this new fumigant gave promise of being well adapted for citrus fumigation.

It remained to develop a satisfactory machine for measuring the dosage and distributing it under the tent. This has been accomplished by the machine shown in figure 1. By a few turns of the crank the dosage is conveyed from the hopper to a container suspended from a scales where the actual weight is read on the dial. The charge is then blown out by means of the foot bellows. This machine has worked very well where the trees or the dosage has not been too large, but for large trees a power machine as shown in figure 2 has been developed to meet this requirement. The dosage is weighed as in the small machine and it is blown under the tent by a rotary fan operated by a small gasoline motor.

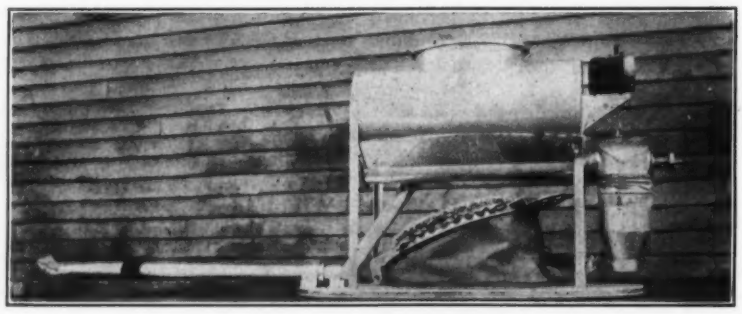

Figure 1—Hand Dust Applicator

Several hundred tests have been carried on with this fumigant in comparison with liquid hydrocyanic acid to determine the relative killing efficiency. Series of such tests have been made (a) in a fumigatorium, (b) under form trees, (c) repeated tests on the same trees, (d) under regular commercial conditions. In most of this work not only the kill of the scale has been recorded but chemical determinations made of the gas concentration at frequent intervals during the exposure.

Some interesting facts have been brought out in the course of the above tests, but one point in particular has an important bearing on practical citrus fumigation. Previous experience with dust fumigation indicated that a relatively less amount of gas was necessary to effect the same kill with the dust than with the liquid. My explanation of this was that in the case of the dust the distribution of the innumerable particles, each representing a generation unit often in close contact with the insects, accounted for the greater efficiency. I still think this explanation accounts for such results in part. In fact we have shown that where the dust is simply blown onto the ground, less efficiency is secured than where the dust is thoroughly distributed throughout the tree.

But in the course of recent tests where the gas concentration was determined chemically as well as by the results on the scales, it has been shown that less gas actually escapes through the tent in the case of the dust. Where a third less gas is put under the tent with the dust than with the liquid, practically the same mean concentration occurs under the tent in both cases. If this finding is borne out with more extensive ex-

Continued on page 22

Fruitmen's Club

National Advertising of Florida Citrus Fruits Fails

Failure to secure the required 75 per cent of the estimated season's citrus crop behind the guarantee of 5 cents per box toward the million dollar advertising fund, resulted in the collapse of the plan which had been sponsored by the Fruitmen's Club at the sugegstion of C. C. Commander, general manager of the Florida Citrus Exchange.

At a meeting of the board of governors of the Club held in Tampa on June 25, the following resolution was adopted:

Resolution

WHEREAS the Fruitmen's Club did appoint a Board of Governors to endeavor to work out a campaign to nationally advertise Florida Citrus Fruit, it being understood that this campaign was only to be undertaken when shippers, packers and marketing agencies representing at least 75 per cent of the citrus fruit of the state should be signed up under a similar contract agreeing to pay in to the designated Bank or Trust Company 5 cents for each and every box of fruit passing through its or their packing houses.

WHEREAS the report as made by the Chairman of said Board of Governors indicates that signed contracts received to date represent a tonnage about 10 per cent short of the required amount,

WHEREAS a number of the contracts were signed by shippers, packers or marketing agencies while laboring under the impression that all of the larger marketing agencies had definitely agreed to enter into the undertaking under a similar form of contract,

WHEREAS the Board of Governors had understood the representative of one of the largest marketing agencies, who is a member of the Board of Governors, to state that his company would sign up all of the houses operated by it, and the representative of this agency now informs the Board of Governors that it will not do so, and

WHEREAS with the support of this marketing agency it would have been possible to have carried out the project, and without the support of this particular marketing agency the Board of Governors, with extreme regrets, finds it impracticable to proceed further with the project at this time,

THEREFORE BE IT RESOLVED that the following shippers and marketing agencies who had signed the proposed contracts be informed to this effect:

Florida Citrus Exchange, Tampa, Fla.
Chase & Co., Orlando
Standard Growers Exchange, Orlando
Gentile Bros., Orlando
R. W. Burch, Plant City
Alexander & Baird, Beresford
L. Maxey, Inc., Frostproof
Lee County Packing Co., Fort Myers
H. T. Montgomery Corp., Tampa
M. N. Stout Co., Inc., Plant City
W. H. Mouser & Co., Orlando
Fugazzi Bros., Tampa, Fla.
Richardson-Marsh Corp., Orlando
R. D. Keene & Co., Eustis, Fla.
Eustis Packing Co., Eustis
P. H. Varn, Plant City
The Winter Park Land Co., Winter Park
A. S. Herlong & Co., Leesburg
L. B. Skinner, Dunedin
Winter Park Fruit Co., Winter Park
Chandler-Davis Co., Lakeland
Welles Fruit & Live Stock Co., Arcadia
Nelson & Co., Oviedo
Carey & Walter, Inc., Plant City
E. W. Wiggins, Plant City
Acme Fruit Co., Fort Pierce
Sunny South Packing Co., Arcadia
J. R. Head, Plant City
J. C. Lee, Leesburg
Robert McDougal, Dunedin
Jaudon Bros., Miami
Ellis-Chase & Co., Lakeland
Maynard Crane, Mandarin
E. E. Neal, Jacksonville
Crystal Lake Fruit Co., Tampa
Chas. R. Ensey, Jacksonville

ALSO BE IT RESOLVED that the Board of Governors is appreciative of the loyal support given to this important project by the press of the state, and expresses its thanks to those factors who signed the club's advertising contract as well as to those factors who had indicated their willingness to sign if contracts representing the necessary 75 per cent of the crop were secured.

Hope For Future Success

Following the meeting of the board of governors, President V. B. Newton of the Fruitmen's Club and Chairman W. H. Mouser of the board of governors, issued a statement in which they expressed the hope that while the present effort had failed, that later on all shippers and growers might be brought together on some plan of national advertising of Florida citrus fruit. C. C. Commander, manager of the Florida Citrus Exchange, and A. M. Pratt, sales-manager for Chase & Co., also issued statements outlining the position of their organizations.

Skelly Makes Statement

Later, F. L. Skelly, manager of the American Fruit Growers, Inc., issued the following statement:

An erroneous impression as to the attitude taken by the American Fruit Growers Inc. might be obtained from some of the accounts which appeared in the state press immediately following the meeting in Tampa on June 25th, and in order to correct any such possible misunderstanding, and because the American desires that its clientele and the general public may know just what position it did take in this matter, we publish the following letter which was presented to the meeting of the Board of Governors in Tampa on June 25th setting forth definitely the position of the American Fruit Growers Inc.:

June 24th, 1926.

Mr. W. H. Mouser, Chairman,
Board of Governors Citrus Advertising Campaign,
Orlando, Florida.

Dear Sir:

We advise as follows with regard to the program for general advertising of Florida citrus fruits:

Our Company will pay into the proper funds for this advertising campaign Five Cents (5c) per box on all Florida citrus fruit which this Company may produce on its own groves or otherwise own during the citrus season of 1926-1927.

Our company will, on behalf of the grower, deduct from the net proceeds of sales due the grower and pay into this fund Five Cents (5c) per box on all citrus fruit which we may handle during the said season for the account of growers who instruct us to make such deduction for this purpose.

This meets the legitimate requirements and purposes of the effort being made and at the same time conforms to the principles on which our business has always been conducted, with respect to the right of independent judgment on the part of each grower in all matters of this nature, involving an expenditure of his funds.

Yours very truly,
American Fruit Growers, Inc.
By F. L. Skelly
Manager Orlando Division

Conditions in the Amazon valley are suitable for the growing of enough rubber to supply the world, provided proper measures are taken to protect the crop against diseases, of which there are many, says James R. Wier, pathologist of the U. S. Department of Agriculture.

Rural boys and girls and club work should be synonymous.

Radio for Florida Growers

The Following Talk Was Broadcast on Tuesday Evening, June 29, by Wm. Justice Lee, Secretary-Treasurer of Chase & Co., Orlando, Fla.

Tonight I am going to take a few minutes to tell all of you something about the real usefulness of radio, and particularly its real money value to Florida growers and shippers of citrus and other perishable products. We are all inclined to think of radio either as merely a form of amusement, or as wireless telegraph for the purpose of keeping in communication with ships at sea or from continent to continent across the ocean. Probably very few of us have actually ever stopped to think that certain kinds of information that are broadcast from this and similar powerful radio stations is of vital value to the tillers of the soil.

Take for instance the daily market reports and car movement reports that are broadcast in the winter time every night from this Station, on or about 7:30 P. M. If you are a citrus grower you can sit down at 7:30 in the evening with a sheet of paper before you and write down in a period of 3 to 5 minutes the condensed auction reports covering sales of oranges and grapefruit in the leading markets of the country, including Chicago, Philadelphia, New York, Boston etc. I wonder whether any of you have ever stopped to think the cost and detailed effort that is required to compile this information—and I doubt very much if you have. If you are like most radio fans you are inclined to take what is given to you free without a thought as to the real cost and the time and the effort behind the service.

These particular reports of sales and movement of citrus fruit are sent by wire from the large auction markets in the country to a central office in Orlando. These reports are received between 3:00 and 5:00 o'clock in the afternoon. All of these telegrams are in cipher and have to be decoded and even then the expense per telegram sometimes runs several dollars. It is estimated that the actual cost of compiling these citrus fruit reports which can be broadcast in 3 or 4 minutes in the evening, is approximately $30.00. that cost $30.00, and all you have You are offered free information to do is to sit down with a pencil and copy it down. You don't have to pay any license fee for the privilege of listening.

When you have this information copied down and can look over the sheet of paper, you can see the range of prices at which our oranges, grapefruit and tangerines sold in the principal markets of the United States—furthermore if you are methodical and you keep these papers from day to day throughout the winter, you can strike your own auction averages for each week or month. Another thing you can do is to keep a record of the car movement showing the number of cars oranges, grapefruit and tangerines that leave the state each 24 hours and in that way keep posted on what is going forward and form some idea as to what the supply is going to be and its consequent possible effect upon the demand. You all know that supply and demand governs the perishable prices.

Later on in the winter when tomatoes, celery and vegetable shipments begin, daily broadcasting will show you the number of cars going forward and in all probability next winter there will be prices quoted on vegetables sales also, in addition to citrus. This is one form of usefulness to farmers. There are many growers in Florida who are located at remote points and who have some difficulty in keeping posted on the citrus conditions. By listening in each night you will get a condensed and snappy report and will know how the markets are acting.

Florida has been a little slow about this service. There have been a number of broadcasting stations running in Florida, but as far as we know only two have been giving information of real value to the farmer. One is Jacksonville, and the other is at this Station WDBO, Winter Park.

Let me tell you what they are doing in California. Any California deciduous fruit grower and packer can now tune in each day at noon and listen to Station KPO at San Francisco and can learn the tone of the market, demand and supply, and other important points. When he is ready for his dinner at 6:15 in the evening he can again turn to his radio and get all the fruit news of the day.

Not long ago Mr. Wilmer Sieg, General Manager of the Calif. Fruit Distributors, spoke over KPO. When Mr. Sieg made his first talk it was chuck full of the latest fruit news, together with conditions that particular day in the eastern auctions. Hundreds of growers and packers had tuned in on KPO and Mr. Sieg's was heard not only in Calif. but Washington, Idaho, and Utah fruit districts. So far as was known in Calif. this is the first time eastern auction prices have been distributed so widely along with other important trade news.

However, my friends, let me call your attention that this same service has been given here in Winter Park since last January regularly. In California the growers and packers thought that this was a wonderful service when it started up. I wonder whether the Florida farmers appreciate what they are getting for nothing? In Calif. they figure that this particular 10 minutes which is used for broadcasting "will be the most valuable 10 minutes of the business day for any fruit man in the country."

It is possible for this Station to furnish other classes of information also. If there is sufficient demand for it this Station can broadcast the day's market prices on eggs, poultry and certain vegetables that are now not being given, but the demand for this service should come from the agriculturists or poultry men or others who have an interest in this matter.

Let me also tell those of my local audience who reside within a range of 10 miles of Winter Park that they can receive WDBO satisfactorily on a crystal receiving set, the entire cost of which should certainly not exceed $7.50. Probably those who would be interested in this announcement are not listening tonight, but if those of you who have radio sets and are listening will tell your friends who do not own radios that they can get a complete crystal set including everything necessary for about $7.50, I have no doubt that many of your friends would be very keen to put in such equipment.

Now another service to the farmer is the matter of weather. I am speaking as a fruit man for I have been in the fruit business for 14 years—I have suffered along with other grove owners as a result of cold weather in the past. Your radio station can furnish you with weather reports every night at a given time,

Continued on page 20

CITRUS COMMENTS

BY

R. E. Lenfest, Manager Horticultural Department
Orange County Citrus Sub-Exchange, Orlando

Rust Mites

The development of the rust mite is never the same in any two successive seasons. There are things that are similar but that is generally about as far as it goes. This season has been no exception in being different from last year. The main rust mite infection was later in coming this year in some sections and in some it was about on time. The fact that the summer rains were so slow in coming added another factor in their development. The fungus that attacks the rust mite is dependent on moist weather for its rapid development. It has been only recently that any numbers of rust mites killed by the fungus have been noted. This means that the growers that want to keep their fruit bright will have to keep close watch farther into the season than they have done before. Those who dusted thoroughly during the early part of the rust mite development and while the weather was still rather warm should have killed practically all the rust mites in their groves. However, for some reason there are numbers of dusting machines that were run through the groves without putting out sufficient dust. Where enough dust was used in the dry, warm weather the results were extra good.

As soon as the rains started the most frequent question asked seemed to be how to control the rust mites since the rains would wash off a lot of the dust. The best answer to this is "Thoroughness". This should be the slogan of all dusting or spraying operations at all times and is especially necessary when trying to kill the rust mites during rainy weather. If the lime sulphur solution is used the strength should be about one to seventy to a two hundred gallon tank. Then cover all parts of all trees. This means the fruit, the leaves on both sides, the green twigs, then the branches and trunk. The first three of these are very important in the control of rust mites.

The general opinion is that the lime sulphur solution if applied thoroughly will remain effective on the trees for a longer period than the sulphur dust, and this is probably true. There is also the feeling expressed by many growers that the dusting method during rainy weather is not very effective. Some go so far as to say that it is a waste of time to dust during rainy weather. No one will question the fact that better results can be secured with the ordinary dusting methods when the weather is dry than when there are rains every day. The main trouble with most of the dusting is that not enough dust is put into the tree. Because the dusting is easily and quickly done the whole thing is placed on an economy basis with the idea of going through the grove as quickly as possible and using a minimum amount of dust.

If a grower owns his own duster and can use it just when he wishes he can dust the grove once from one side of the rows and then in a week or ten days go over the grove and dust the other side of the rows. However, much of the dusting is done by one or two machines in each community and this means that often it is not possible to outline and carry out a double dusting schedule. For this reason it is best to try to do it all at once. To do this the duster must be able to throw out a large volume of air with a high velocity and with the air throw out a lot of dust. Not just enough to make the air hazy but enough to make the air filthy with sulphur dust. It should be possible to control the amount of dust quickly and easily so as not to waste too much. Then do not let the mules or tractor move down the rows too fast. Plan to use from one-half pound for the smaller bearing trees up to at least one and one-quarter pounds on the large trees. Then dust both sides of each row and make sure that the dust goes all through the trees.

If you have had poor success with dusting in rainy weather in past seasons just try the plan of dust with plenty of air pushing it through the trees and without being in too much of a hurry to reach the other end of the row. This plan has been passed out to growers who have tried it and been surprised at the success they had even in cases where the dusting was done in the morning and there was a rain that afternoon. This did not allow much time but there was a high percentage killed and the job paid even though some of the fruit was already damaged to a certain extent by the rust mites.

Cultivating Young Trees

It is quite necessary to keep the young trees worked to get the largest amount of growth on them. This does not mean that they must be treated roughly but that they must have plenty of shallow cultivation during the growing season. An acme harrow generally gives the best results. To depend on hoeing the young trees as the sole source of cultivation generally results in a lot of expense and quite often poor results. Trees can be hoed by hand and made to grow just as well as those that are worked with a harrow but to do this the hoeing must be carefully and thoroughly done. Much of the hoeing done in groves is very poorly done. The ground around the trees should be left soft and loose with as much humus left mixed with or on top of the soil as can be left. The grass and weed roots must all be out of the ground. A ring of mixed grass and dirt should not be piled up around the trees. Neither should a flat hard surface be left under the tree as this is not a good job.

Care For Farm Tools

During the summer months is a good time to get some of the tools repaired and ready for later use. Unless it is absolutely necessary do not leave the tools out in the summer rains. If they must be left out be sure that they are well oiled and then cover them up as best you can. Set discs and plows and such tools up on boards and do not leave them half covered with dirt just as they were left when the team was unhitched. A little time spent in taking care of the tools now will save a lot of time at some later date.

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GROVE CALENDAR FOR JULY

Timely Suggestions for Grove Work During the Present Month

Continue cultivating nursery stock, and young non-bearing trees.

Fertilize nursery stock.

Replant spaces in newly set groves.

Prepare stocks for summer budding.

Spread beneficial fungi to control white-fly.

If trees are affected with foot rot, scrape soil away from affected roots and base of trees, cut away infected bark and paint with bordeaux, lime-sulphur or carbolieum.

Continue spraying pecans with 4-4-50 bordeaux mixture (plus 1 pound of lead arsenate) to control scab and chewing insects.

Start budding and top-working trees.

FARMERS' AND FRUIT GROWERS' WEEK

The Fifth Annual Farmers' and Fruit Growers' Week for the men and women of Florida, will be held at Gainesville on August 9 to 14, inclusive, under the auspices of the Agricultural Extension Division of the College of Agriculture, University of Florida.

These annual gatherings and schools of instruction in horticultural and agricultural topics have come to be recognized as among the very greatest factors for good in the development of these great industries of the state, and each year the interest and attendance has shown marked increase, attesting the appreciation of the benefits of the courses given.

Citrus, being the leading horticultural industry of the state and the greatest of all its agricultural resources, naturally comes in for a major share of the attention of the instructors and speakers during the week. Other lines of horticulture and agriculture, however, receive their full share of attention, while home economics also holds a prominent place on the program.

The tentative program for this year is by far the best of any of the gatherings yet held, and will bring those in attendance in close touch with the best authorities of state and nation along all lines of agricultural and horticultural endeavor.

Every grower in the state who can possibly do so should arrange to attend the daily sessions this year—and to take his family with him. The wife, sons and daughters will be as much interest and as greatly benefited as the head of the household.

ADVERTISING CAMPAIGN FAILS

The Citrus Industry deeply regrets the failure of the proposed co-operative advertising for Florida citrus fruits. It fully believes that had this campaign gone over, it would have resulted in immense benefit to the citrus growers of the state. Unfortunately, a sufficient number of growers and shippers to insure the success of the campaign did not see the matter in the same light, and the campaign failed through lack of support.

No factor in the state was more thoroughly in accord with the purpose of the proposed campaign than The Citrus Industry, and none gave it warmer support. However, we recognize the right of every individual grower and shipper to his own view of the situation, and in the final analysis it appeared that a sufficient number of those interested did not approve, or at least did not support, the proposal to the extent necessary to insure its success.

The campaign has failed and the incident is closed. Acrimonious discussion, biting criticism and recrimination will avail nothing and only serve to aggravate an already strained situation. The sane thing to do now is for all concerned to accept the verdict as rendered, get to work and do the best possible under the circumstances to make the next season's crop a profitable one for the growers. Later on, perhaps, a similar united effort at co-operative advertising of Florida citrus fruits may meet with a more favorable reception.

Oh, Yes; there will be many grove plantings in Florida next winter. The grower who uses wisdom in the selection of his grove site, the preparation of his soil and the selection of his nursery stock, and who later plants, fertilizes and cultivates with care, will receive good returns from his investment. The hit-or-miss planter never realizes a profit under any conditions.

With the advertising campaign definitely in the discard, for the time being, there is all the more reason why Florida citrus growers should exercise every possible effort to produce fruit of quality—both inside and out. If there is to be no concerted co-operative advertising, we must prepare to make Florida fruit advertise itself by superior quality and appearance.

Budgeting Time Simplifies Housework

By Mrs. Anna Stedman

Lack of time is the greatest handicap a woman has to overcome who is determined not to permit her household cares to dwarf all other interests in life. Sometime ago I suddenly realized that I had tied myself down to household routine, and had given up all other activities because I had no time to devote to them.

Previously my expenditures month after month had begun to run beyond my means, and what had at one time been more than an ample allowance was no longer sufficient. I was getting into debt, but when I placed my spending under the limitations of a budget my financial difficulties disappeared.

It now occurred to me that I had become a spendthrift with my time. Perhaps if I budget my time it will be just as helpful as it was with my money, I said to myself, and forthwith drew up a budget and began working according to schedule. My housekeeping has been going along much more smoothly, and I have more leisure time for other things that relieve farm life of its monotony.

As I did with my accounts, I first made allowance for the fixed demands on a woman's time that cannot be ignored, such as the three meals. Dinner requires two hours to prepare, eat and clear away, and supper an hour and a half. I have always made it a point to have the breakfast dishes back in the cabinet by 8 o'clock, and then read the paper and give myself a few minutes upstairs to air the rooms before beginning the real day's work.

Fortunately at this time, I was relieved of the one job that had bothered me most. This was cleaning and refilling lamps and trimming wicks. For some reason I detested this. After years of it, we finally put in carbide gas, and this one factor alone gave me a full hour extra every day. Besides doing away with the lamps, the hot plate made the cooking much easier, and of course it is much more pleasant to read and sew at night.

After making adequate allowance for other duties which are just as regular as night and morning in any home, I proceeded to map out my week, and I have kept to the program religiously.

On Monday I wash, not because everybody else does, but because under my budget system the clothes have all previously been made ready, and it is easy to simplify the cooking by utilizing the left-over from the usual abundant Sunday dinner. My washing is finished early in the afternoon, and I give myself an hour for reading, which rests me more than anything else.

Tuesday is ironing day, but I vary the monotony if I don't lessen the toil, by baking. With the exception of a pie or two on Saturday, all my baking is done on Tuesday, and between that and the ironing most of the day is taken up.

It is fortunate that I like sewing, for I have a great deal of it to do. Wednesday and Thursday mornings I give up to this task, having set aside during the rest of the week such sewing as has accumulated. I am again a regular attendant at the Wednesday afternoon Home Demonstration meetings, which give me an opportunity to express myself among women who are interested in the same things which interest me, and I am glad to get their views. I usually arrange then for a few visits to be made the following afternoon.

Friday is a day of all work. There are the rugs and cushions to be hung out, and a general sweeping and dusting to be done. I begin upstairs and work down, and as I go over each room thoroughly I take time to gather up the soiled linens from the dressers, bags and shelves and place them in the laundry basket. I make a special search for sewing that needs to be done, and set it aside for the following week.

The kitchen, porches and the walks are cleaned on Saturday mornings, and the bed linens changed. I also check over my pantry supplies, and order what is necessary. This is simplified because I keep a memorandum pad on which is jotted down from day to day the things that are runniug short. There is little more to do except decide upon anything special for Sunday dinner.

Naturally there are occasional interruptions, sometimes seasonal, such as the canning, and sometimes merely accidental. These have to be taken care of as they occur, but little odd tasks that may be overlooked during the day can be attended to in a few minutes at night. As a rule, however, I try to spend my evenings along recreational lines. No play is just as bad for Jill as it is for Jack.

Most of my fine sewing is done at night because it is a recreation for me, especially now that we have improved the lighting. One or two evenings I read, and manage to finish at least one good book and two or three farm journals and magazines in the course of a month. I also follow two regular radio programs. Doing my work systematically has made it very much easier for me, and I am more interested in it now that I have found time for other interests.

FAULTY CITRUS CROP ESTIMATES COST GROWERS BIG SUMS, GUMPRECHT ASSERTS

Overestimating of the citrus crop has cost the growers many thousands of dollars, in the opinion of H. G. Gumprecht, manager of the Manatee Citrus Sub-Exchange. Such estimates have too often been based on pure guess work and are frequently made by amateurs, whose chief object apparently was free publicity at the cost of others, Mr. Gumprecht states. He also points out that the actual marketing crop during the coming season may not exceed that of last season.

In an interview with a Bradenton News reporter, Mr. Gumprecht, who is recognized as a student of citrus marketing and estimates, made the following statement:

"We also recognize that underestimating the citrus crop is of no benefit to the industry or the growers. Therefore the Citrus Exchange, as an organization, is making an extra effort to secure a reasonably accurate estimate which in due time, will be published and which, we trust, will prove of real commercial value.

"The agricultural department at Washington, could be of greater help to the citrus industry, if it would defer publication of the government estimate until October 15. This, of course, would not suit the speculative element, but it would certainly give the government representatives in Florida a decidedly better chance

Continued on page 18

NOTES OF THE TRADE

WEST COAST FERTILIZER COMPANY STARTS NEW PLANT

When the old plant of the West Coast Fertilizer Company was burned last November with a loss of $150,000.00 it was decided immediately that a new plant be built on the old location which is an exceptionally desirable one on account of being on both the Coast Line and the Seaboard.

The construction of the new plant was tarted by the Austin Company, Engineers and Builders of Cleveland, Ohio as soon as plans could be passed on and the debris of the old structure cleared away. This is a modern building with re-enforced concrete floors and foundation, framed with structural steel and covered outside with corrugated steel and a built-up asphalt roof.

This new Plant is three hundred feet long and has a width of one hundred twenty feet. It has mezza-nine floors for the storage of bagged goods and for working space, the main floor being used for storing manufactured goods and bulk materials of which it is always necessary to maintain large stocks.

The loss on the old plant by fire on the night of November thirtieth was practically covered by insurance.

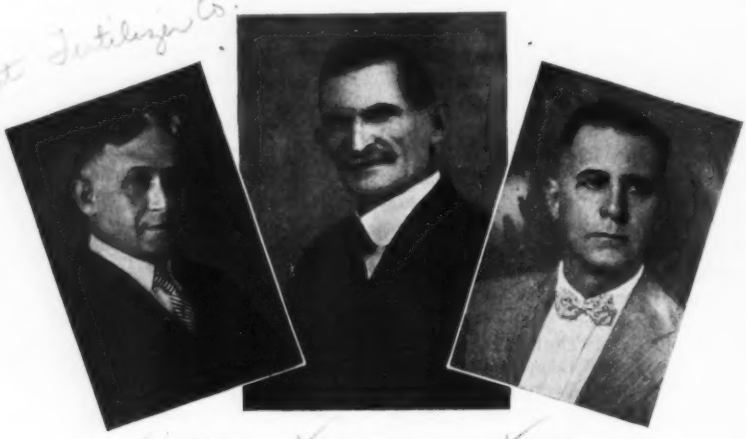
The original officers of the West Coast are all still actively connected with the company in the same capacities with the exception of Mr. E. B. Priest, who resigned as Vice-President to enter the service during the War. On his return he again became connected with the company in sales and field work in which he is widely known and considered one of the best of practical citrus men. The vacancy created by Mr. Priest's resignation was filled by the election of Mr. E. H. Folk who had been acting as General Manager from the beginning of the concern.

Mr. J. H. Blake, President, has been actively engaged in the business of fertilizer manufacture in Florida for nearly thirty years, having been factory superintendent for Florida Fertilizer Company at Gainesville for many years and later in much the same capacity with the Gulf Fertilizer Company until the West Coast was organized.

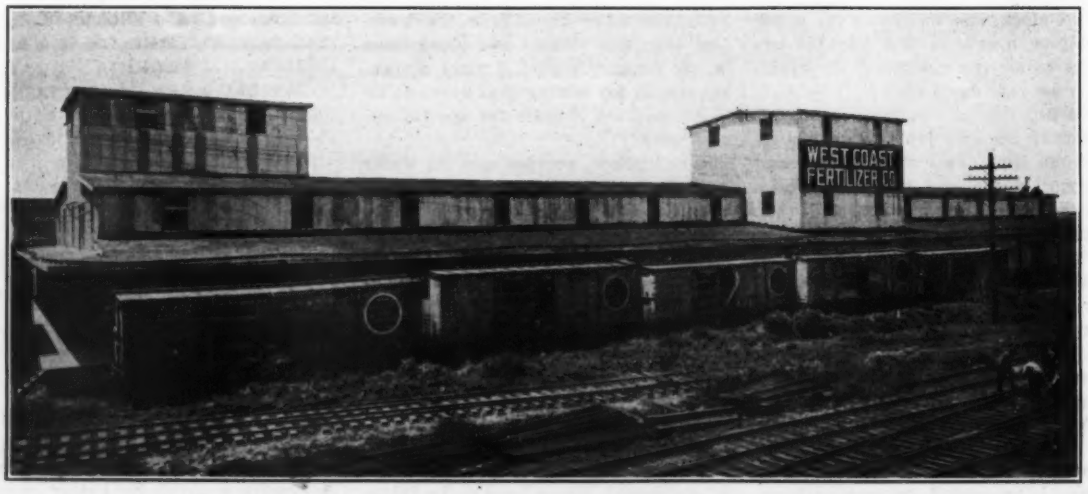
Mr. Folk the present Vice-President was for two years connected with the Barker Chemical Company at Inglis, Florida, and was with the Gulf Fertilizer Company for six years before coming to the West Coast at the time it began its career in 1914.

Mr. R. B. Campbell, the Secretary and Treasurer, was the prime mover in the organization of the West Coast and was formerly connected with the Tampa Fertilizer Company for many years as general superintendant. He has always divided his time between factory production and field

Continued on page 16



E. H. Folk J. H. Blake R. B. Campbell



New Plant of West Coast Fertilizer Co., Tampa, Florida

THE GROWERS' OWN PAGE

This department is devoted to the growers, for their use in giving expression to their views and a discussion of growers' problems. Any grower is welcome to make use of this department for the discussion of topics of interest. The only requirements are that the articles must be on some subject of general interest, must be reasonably short and must be free from personalities. The editor assumes no responsibility for views expressed, nor does publication imply endorsement of the conclusions presented.

HONEST CRITICISM

Winter Haven, Fla., June 30, 1926
Editor,
The Citrus Industry,
Tampa, Fla.

I have talked with many persons and read numerous articles about business generally and find that great stress is placed on honest criticism. I find the consensus of opinion is as follows:

Often criticism comes from those who have never accomplished anything themselves but think they are privileged to indulge in expressions of what they believe others should do.

Some believe that they are the persons who should be called upon to act because they could do things so much better than the ones who are doing them.

Some make complaints in good faith but their criticism is without merit, owing to the fact that it is based on false premises, not knowing the real facts and that certain things they advocate are being really carried out.

Criticism without the full knowledge of the facts and merely for the purpose of having something to say or in order to shake confidence or to magnify the importance of the critic is a dangerous thing and no honest person will indulge in criticism of this kind.

We place in the class of obstructionists those who never get any where themselves and do all they can to prevent others doing anything. It is meet and right that honest criticism should be heard with respect in every discussion. If both sides of the question are fully aired by criticism and discussion many points are brought out that otherwise might be lost sight of and neglected.

Proper criticism is the life of any proposition that is worth considering at all. No organization can expect to escape criticism. The more interest there is shown in an organization the greater will be the amount of criticism of its acts. This shows a healthy state of affairs which tends to improvement where needed and also to keep the organization up to its work in striving to please and benefit its members.

A few more fair minded critics would not do an honest cooperative any harm for it would mean that more growers were becoming interested in what it was trying to do and accomplish and not letting things go by default. As I have said before "let's find out if our methods, policies and personnel are right and let us determine if our leaders can be depended upon to lead us out of the wilderness". It is not only the privilege but the duty of every grower to honestly and in a considerable manner criticise anything which he believes to be wrong. By this means attention is called to errors and faults which otherwise would go unnoticed and uncorrected.

One of the strongest advocates of the Exchange says "the only thing that can hasten improvement in the citrus industry is extremely low and unprofitable prices which will awaken growers to united action. Mere opinion from individuals have little effect." This does not sound very optimistic, showing that some of the good friends are a little skeptical about the present organization being able unaided to produce proper results, at least, in the near future.

Just a few days ago one of the most prominent citizens of the state and acknowledged as a real leader, particularly in the west coast section, said, "I agree with you fully that the marketing of the citrus crop is not satisfactory and that it can be and must be improved upon." That sounds strange after reading that "the organization is making wonderful progress."

Business is not intuition but is only made a success by efficiency gained through close study and careful application for a period of years. It is true that the crop the past season was generally marketed at satisfactory prices but it was not owing to any particular organization or individual but because there was a short crop.

Owing to the unnecessary number of selling agencies which are being supported, the cost of disposing of the crop is a heavy burden. With so many selling agencies causing fierce and unhealthy competition we are bound to have low prices for normal crops. It is a very good thing to have a general agreement on advertising but with all this the industry will never be a success unless there is unanimity in some practical business methods of sale and distribution, having big men at the helm who "have been weighed in balance and found not wanting."

With the prospects of a normal crop for next season and it being generally admitted among well posted men that the marketing is not satisfactory, is it not the duty of every true citizen of the state to exert every possible effort to work out some feasible plan to solve, or at least improve, the very serious conditions that confront us.

I have just read an article by one of the big men of the state in which he says "if we do not start now to make a place for increased production we shall come to find that the markets for Florida citrus fruits have died a natural death as does a grove that has not received the proper cultivation."

It is time for every one unselfishly, wholeheartedly, without any faltering to get back of the citrus game and see to it that the industry which is the backbone of Florida be resuscitated and placed on its feet. Get all the growers together, large and small, and solve the critical problems that face us. On this action depends much of Florida's future prosperity. Martin Lane.

MR. BURNHAM RESIGNS AS CHAIRMAN, EXECUTIVE COMMITTEE FLORIDA GRAPE GROWERS' ASSOCIATION

After serving as chairman of the executive committee of the Florida Grape Growers' Association for the past two years, Mr. Burnham has handed in his resignation to the president, Colonel Fisher. Mr. W. H. Brophy, of Crystal Springs, has been appointed to fill the chair during the unexpired term of Mr. Burnham.

Mr. Burnham has served faithfully his charge, and the Association will greatly miss his activities as chairman of the executive committee. He has been greatly instrumental in the upbuilding of the industry to what it is today, and the grape growers are deeply endebted to him.

Comparative Efficiency of Wire-Basket Bunkers In Refrigerator Cars

By R. G. Hill, Associate Horticulturist, W. S. Graham, Junior Physiologist, R. C. Wright, Associate Physiologist, and George F. Taylor, Associate Biophysicist, Office of Horticulture, Bureau of Plant Industry

The Car-Cooling Problem

Refrigerator cars in the fruit and vegetable service to-day are provided with compartments for ice at each end of the car. These compartments are filled through hatches fitted with insulated plugs located at each corner of the roof, and partitions, or bulkheads, separating them from the loading space.

Although the designers of this type of car differ in opinion as to the kind of ice bunker to be installed all recognize the fact that the cooling of a refrigerator car is entirely dependent upon gravity for the circulation of air within it. This circulation is brought about by the cooling of the air as it comes in contact with the ice. The cooled air slowly drops to the floor of the bunker and issues therefrom into the loading space, where it is brought in contact with the load again slowly rises as it becomes warmer and passes through and over the load back into the bunker.

Under these conditions the movement of air is exceedingly slow, and in order to accelerate it and to obviate the possibility of any obstruction that would block it great care must be exercised in the construction of the car. To obtain the maximum degree of cooling much attention has been paid to the construction of the ice compartment, or bunker, and in connection with this study consideration has been given also to the insulation of the car, without which the effectiveness of the ice in the bunker would be lost.

Not until the year 1918 was any attempt made to standardize the refrigerator car. In that year, as a result of the efforts of the United States Department of Agriculture in cooperation with officials of the railroads and refrigerator-car lines and of car builders who were attempting to find the best methods of handling, storing, and shipping fruits and vegetables, the United States Railroad Administration issued recommendations for what is now known as the United States standard refrigerator car.

Most of the refrigerator cars built or rebuilt since this type of car was recommended do not comply with the United States standard specifications in all details, but the essential features—adequate insulation, basket bunkers of sufficient ice capacity to cool the load properly, insulated bulkheads with openings at top and bottom large enough to allow free air movement in and out of the air compartment, and floor racks of sufficient height from the car floor to allow an easy unrestricted flow of air under the load—are generally recognized by car designers and embodied in their plans.

Installation of Wire-Basket Bunkers

The cars of the United States standard design are equipped with wire-basket bunkers fastened to nailing strips and placed about 2 inches from the side and end walls, the ice being supported by either a metal or heavy wooden grate placed a short distance from the bottom of the compartment. Most cars so equipped are provided with a solid insulated bulkhead having an opening of about 12 inches at the bottom and 14 inches at the top. The space between the ice receptacle and the car walls permits the free movement of air over almost all of the outer surface of the ice in the bunker.

The wire-basket type of bunker has proved its efficiency, but in the repeated attempts of car designers to improve the construction and efficiency of refrigerator cars another form of bunker, known as the divided wire-basket bunker has been devised. It embraces the features of the United States standard type but in addition has a series of divisions, or flues, for the purpose of decreasing the ice capacity and increasing the meltage surface as the ice melts. The bunker is divided into four distinct sections by a main partition placed parallel to the longitudinal axis of the car, consisting of two sections of heavy wire netting 4 inches apart extending from top to bottom of the bunker and two smaller partitions placed parallel to the main partition but extending only about two-thirds the height of the bunker.

These secondary or intermediate partitions are of a construction similar to that of the main partition. They act as flues and allow air circulation around more of the ice than is the case with the United States standard type of recommended bunker construction.

Results of Test Trips

As a means of determining the comparative performance of the two types of bunkers, two test trips were made, using two cars of identical construction for each test except that one was equipped with the wire-basket bunker. The first test was made in September, 1923, from the State of Washington to Chicago, Ill., and the second, from Florida to New York City, in June, 1924. Both tests were made possible only through the cooperation of the shippers, railroads, refrigerator-car lines, and receivers. The insulation in the cars was massed and was similar on all surfaces, and both cars were equipped with floor racks and wood roofs. The ice capacity of the divided wire-basket bunker car was 7,400 and that of the wire-basket bunker 10,400 pounds.

The cars were loaded with apples for the first and with oranges for the second test. Early on September 15, 1923, the cars were pre-iced at Othello, Wash., and loaded for the first test at White Bluff, Wash., and consigned to Chicago, Ill. The temperature of the apples loaded into the divided wire-basket bunker car was 78° F. and that of the fruit in the wire-basket bunker car 70.5° F. In the following discussion of both tests the divided wire-basket bunker car will be referred to as car A and the wire-basket bunker car as car B. The differences in the temperature of the apples in car A and car B were due to the fact that the fruit in car A was packed and loaded at once, while that in car B had been held in the packing-house storage room, which had been kept cool by sprinkling.

The first re-icing was made at Othello, Wash., on September 17 and the last at La Crosse, Wis., on September 24. Early in the morning of September 25 car B was diverted. Car A arrived in Chicago, at 6 a. m. the same day. The total quantity of ice supplied during the first test, including the pre-icing, was 20,680 pounds for car A and 24,740 pounds for car B, or a total saving of ice in favor of car A of 4,060 pounds.

At the termination of this test the cars were released for regular road service and were not recalled until June, 1924, when they were sent to Florida to be tested the second time On June 9 the cars were pre-iced at Haines City, Fla. The following day car A was loaded at Winter Haven and car B at Florence Villa, and both were consigned to New York. The temperature of the fruit placed in car A was 87° F. and that in car B 79.5°. The fruit in car A was freshly packed when loaded, but that in car B had been held in a packing house.

The first re-icing was at Lakeland, Fla., and the last at Potomac Yards Va. The total quantity of ice shipped during this second test, including pre-icing, was 19,457 pounds for car A. The measured ice capacity of the bunker of car A is 3,100 pounds less than that of car B. In the first test car A not only saved this difference but 960 pounds in addition, while in the second test it saved 534 pounds more than this difference.

Temperatures Maintained

The basis for comparison of the temperatures maintained is the actual temperature of the fruit at the top and bottom layers of the load at the doorway, at the bunker, and in the middle layer at the quarter length of the cars. In addition, the average fruit temperatures of the top and bottom layers of the load are considered. The positions in the cars at which the temperatures were taken are the same in both tests and are in a vertical plane, equally dividing the car longitudinally. The initial readings shown on the accompanying charts, are the fruit temperatures at the time of loading.

Figure 4 compares the temperatures maintained in the top and bottom layers at the doorway and bunker. Inasmuch as there is not so large a difference between the top and bottom layers at the doorway of car A as between the top and bottom layers of car B, the record is in favor of car A. Car B registered a temperature 1 degree lower on the bottom layer at the doorway than car A, but car A was cooler at the top layer by about 2 degrees.

At the top and bottom layers at the bunker, car A maintained a slightly higher temperature than car B; however, the greatest difference was noted in the top layer during the first five days. A greater fall occurred in car A by midnight of the first day than in car B, but the latter fell slightly lower than car A and maintained a gain of approximately 2 degrees throughout the trip.

Attention must be called to the initial fruit temperature at loading. The temperature of the fruit loaded in car A averaged 78° F. and that in car B 70.5°. Consequently, the fruit in car B had the advantage of being 7.5° degrees cooler at the beginning of the test. Had this initial temperature been the same, then in all probability the two cars would have shown the same temperature at the top layer, but car B would have been approximately 5 or 6 degrees higher at the bottom layer during the first few days of the trip.

Again, the difference in temperatures between the top and bottom layers at the bunkers is generally greater than between the top and bottom positions in other parts of refrigerator cars. This difference is more marked where the air circulation becomes choked through poor construction, faulty loading, or the shifting of the load. When the air is blocked at the bottom of the bunker the packages adjacent to it receive the full benefit of the cold air, while those at the top of the load remain comparitively warmer. The type of construction at this point plays an important part in air circulation within the car.

Figure 5 shows the record of the temperatures maintained at the middle layer, quarter length. The curves for cars A and B are practically the same, but if the initial fruit temperatures had been the same, that for car A might have been slightly lower. Car A, however, records a more rapid fall in temperature than car B up to midnight of the first day and over comes the disadvantage of the warmer fruit with which it was loaded.

To understand fully the actual work done in cooling the load, consideration should be given not only to the temperatures maintained within the car at various positions but also to the average temperature of the loading. Although this temperature is not so important as it might appear, it aids in determining the actual performance, particularly if the individual temperatures are given due weight. The average temperature for the top and bottom layers are shown in Figure 5. The curves show a little difference, but the effect of the higher initial temperatures is readily seen. It is reasonable to make allowance for this factor by assuming that in so far as the average temperatures are concerned car A and car B are equal in performance.

Figure 6 shows the fruit temperatures maintained at the bunker and doorway positions on the top and bottom layers in the second test. The temperatures in car A at the bunker were slightly higher in both the top and bottom positions than those in car B, although the initial fruit temperature was 7.5 degrees higher than in car B. The cars show a parallel and abrupt drop in temperature from the time of loading until midnight of the first day, when the drop begins to steady and the curve flattens out. The difference between cars A and B at 6 a. m. of the second day was 7 degrees, approximately the same as that between the initial fruit temperatures, and very slowly diminished until on the last day the temperatures were practically the same. At the top position a more gradual cooling is seen, but from the beginning of the test until about noon of the third day there remained a difference of 7 degrees. This difference diminished slowly but remained marked at the end of the trip. Both cars had practicaly the same temperature until the last reading, when car A showed a slightly lower temperature. At the top doorway position car B showed an average about 1 degree lower than car A. In the bottom position at the beginning of the trip the fall in temperature was sharp and may be favorably compared with the drop in the bottom position at the bunker. Car B registered the lowest temperature throughout the trip. The temperature differences are so slight, however, that when the initial fruit temperatures are considered the performance of the cars may be regarded as equal.

Figure 7 shows the temperatures recorded for the middle layer at the quarter length and the average fruit temperatures of the top and bottom layer of the load in the second test. The middle layer at the quarter length is particularly hard to refrigerate, because of the difficulty in getting adequate air circulation at this point. At the beginning of the trip car A was about 3 degrees higher than car B at this position. This difference gradually diminished, however, until the early morning of the third day, when the temperature of the cars was practically the same at this point. At the end of the trip the temperature of this position in the load had been reduced in car A 45° and in car B 37° from the time

of loading to 8 p. m. on the sixth day a period of approximately 5¼ days. The cars may be regarded as equal for performance at this position, consideration, of course, being given car A because of the warmer fruit with which it was loaded. At the bottom bunker position the temperatures were below 40° F. approximately 48 hours after loading. In the same period at the bottom doorway position they were below 45° F. If a comparison of the temperatures at the top bunker and top doorway positions is made, it will be seen that there is but a slight difference, those at the doorway falling still within the temperatures at the bunker. There is, however, a slight difference in the range of temperatures at the top positions. Those in car A are practically the same as those in car B at the doorway which is is only 1 degree lower, while at the bunker there appears to be an equal range betwen the cars, which would be readily seen if it were possible to superimpose the curves shown in Figure 6.

Comparative Study of Temperatures

The average fruit temperatures of the top and bottom layers of the cars show a marked similarity. If it were possible to place the initial temperature at loading at the same starting point, this similarity would be more marked and would in all probability show the performance of car A to be superior to that of car B. Both cars show a very abrupt fall from the initial temperature, car B being very slightly slower in cooling its load in the bottom position, but the temperature in car A lagged somewhat and 24 hours after loading was 2 degrees higher than car B. At midnight of the third day there were practically no differences in temperature at this position in the two cars. At the top positions a similar relation was found in the same length of time. Car B showed the lower temperature and car A the higher, with an average difference of only about 1 degree.

A study of the average fruit temperature of the middle layer discloses that the difference between cars A and B averaged only about 1 degree throughout the trip. The rather remarkable fact is also apparent that no difference exists between the average temperatures and those maintained in the middle layer at the quarter length, which alone would indicate a striking uniformity in the performance of the cars. From the foregoing discussion of the temperatures maintained by the cars on the second trip it would seem that such differences as exist are so slight as to be negligible from the viewpoint of practical transportation.

At the time of unloading at market destination a careful inspection was made of the test boxes of fruit. Only one decayed specimen was found in car A and no decay whatever in car B.

The efficiency of a refrigerated car is largely determined by its ability to reduce quickly the temperature of a warm load to a relatively low point and to maintain it until the arrival of the car at its destination. Not only must the car be rated for efficiency upon the temperature maintained within it but also upon the comparative quantity of ice it melts in producing these temperatures. Refrigeration can not be obtained without ice meltage, but it is not necessarily true that the car which melts the most ice is the most efficient. However, if the car is in good condition and the temperature of the commodity at the time of loading is taken into account, ice meltage will be some indication of the comparative performance of the car.

In the two tests under discussion the car equipped with the divided wire-basket bunker maintained temperatures equivalent to those in the car having the United States standard type of wire basket. Not only does this demonstrate its efficiency in cooling, but it also shows its economic value in its lesser ice requirement. In the first test, car A was supplied with 4,000 pounds and in the second test with 3,634 pounds of ice less than car B, which may be considered a direct saving in ice meltage and a saving not made at the expense of the cooling efficiency of the car.

Summary

The United States standard specifications for refrigerator cars recommend wire-basket bunkers. To increase the efficiency of these bunkers, a divided wire-basket type has been devised which enable the features of the United States standard wire-basket bunker but has less ice capacity and increases the meltage surface as the ice melts.

To test the efficiency of this new type of bunker two tests were made in which two cars were used, one being equipped with the United States standard wire-basket bunker and the other with the divided wire-basket bunker.

The car having the divided wire basket maintained temperatures equal to those maintained by a car of exactly the same construction except that it was equipped with a United States standard wire-basket bunker of larger ice capacity.

This car proved to be economical in ice consumption, requiring 4,060 pounds less ice in the first test and 3,634 pounds less in the second test.

This saving in ice was not made at the expense of the cooling efficiency of the car.

NOTES OF THE TRADE

Continued from page 12

work which means an unusual appreciation of grove needs applied to the preparation of fertilizer for citrus use.

The West Coast has enjoyed a fine business from its very start and has had a gratifying increase from year to year. The original wooden structure was enlarged by the addition of another wing and another mixing unit in 1920 which doubled its daily capacity of one hundred and fifty tons making it three hundred. The present plant has two modern mixing units of three hundred tons each, made by the Atlanta Utility Works. One of these is installed in the front part of the building close to the Seaboard track and the other is near the center, convenient to the Coast Line tracks. They can be located in the accompanying photograph by the two mixing towers one of which carries a sign nearly eightly feet long.

The new plant with its capacity of six hundred tons per day was completed and operations started May 15th of this year since which time it has been trying to catch up with orders on hand for summer application to citrus groves.

With this up to the minute equipment and its thoroughly experienced personnel, The West Coast Fertilizer Company feels that it is in a position to serve the citrus grower more effectively than at any time during the twelve years during which it has been at their service.

Vines are being used more to cover unsightly objects from view. Among those most commonly used are the Bigonia, which seems to be used more in Florida now than the Bougainvilleas. This vine is a rapid grower and climbs to great heights. There are several shades of this vine, one being a golden color which is often used for covering stone or brick houses Another species has myriads of orange colored blossoms which resembles a mass of flames.

The bulletin compiled by Dr. Arthur S. Rhoads entitled "Diseases of Grapes in Florida" is a booklet no grape grower should be without. It deals with the prevention and control measures of diseases.

Citrus Fruit, Cultivation

Grove Factors Influencing Citrus Fruit Quality

By George V. Leonard, Hastings

Let us first consider just what are the requisites of fruit of the best quality. Good quality fruit should be smooth, thin skinned, it should be uniform in appearance and highly colored when fully ripe, as well as juicy and sweet. Fruit of this description will not only be attractive and pleasing to the eye, but also to the taste.

There are a great many different factors that must be considered in attempting to produce fruit of the best quality. First, we might say we should consider locality, then stock or rot, variety and strains of varieties, cultivation, fertilizing, spraying and pruning. These are only a few of the important factors to be considered, but I do not wish my paper to be too lengthy, so will not take up but these few important factors.

Locality

Climatic and soil conditions should have our consideration here. For the past few years my work has carried me through different sections of the State a great deal and the experience thus gained has led me to believe that citrus fruit can be raised more or less successfully on almost any type of soil in the State; some, of course giving better results than others. I have seen citrus growing on the low flat woods, the high pine land, the low hammock and the high hammock, the high sandy ridges of the lower East Coast, as well as the low muck lands of the same section, the oak ridges of Polk county, and many other types of soil. And as I have stated, I believe that oranges are grown successfully in all of these sections, but in growing them for the best quality I should favor a rather heavy strong soil, one that would not require as much fertilizing as the lighter soils might.

Root Stock

Just a word in regard to the stock. I should say that under average conditions that sour orange root is preferable for growing fruit for the best quality, but there are some sections of the State, such as the Polk county ridge land and the red sand ridges of the lower East Coast where it would seem as though rough lemon root gave good results. However, it would be well in setting out young trees to investigate this point very carefully, for I have seen in some localities where Valencias had been budded to lemon root that the fruit had a tendency to dry out at the stem end, as well as show green around the upper portions of the orange. In some cases, this being noticed as early as the first of March, and of course, such tendencies would greatly lower the quality of such fruit.

Varieties

It is always well for one to acquaint himself with the varieties best suited for his special locality as far as may be possible, and in speaking of this, I would call your attention to the fact that there are undoubtedly two or more strains of some of our best known varieties of citrus fruits, some of which do not bring forth fruit of the best quality. Take for instance, the Parson Brown orange; this orange, as we all know, has not the flavor when at its best that we expect in some of our mid-season varieties. Yet it has its place in our industry, in that it ripens earlier, giving us an orange for marketing during the latter part of October and November. Therefore, to produce a Parson Brown of the best quality, one must be sure that it is of a strain that matures among the earliest. Another well known variety, the pineapple orange, has at least two distinct strains, one the truly high-colored type, another strain exactly the same in every description with the exception that it has not the high color. I have seen these two strains growing in the same grove and of the two, the high colored one is always the more preferable.

Having selected a suitable locality and planted thereon trees of the best varieties and root adaptable to our location, we have complied with the first section of our problem and come now to the second section, that of cultivating, fertilizing, spraying and pruning for quality in fruit.

Cultivation

Cultivation should be done with the idea in view, not only of producing fruit of the best quality, but also that we might keep our fruit trees in a healthy growing condition and so expect quantities of quality fruit. This subject of cultivation has been discussed at many of our meetings, from all of its different angles, and I do not think it necessary for me to enlarge upon it, only to say that I have for two or three years and am still carrying on experiments in non-cultivation in one or two small plots in several of the groves under my supervision. It is my opinion that from a fruit quality standpoint that a practice of cultivating lightly from early spring until the summer rains commence is preferable. In the heavier soils the disc and spring tooth harrow may be used if spools or sleds are used to govern the depth. In the lighter soils the disc harrow on spools, followed by the acme harrow is recommended.

Fertilizing

Like cultivation, fertilizer should be applied not only to produce fruit of good quality, but to keep the tree vigorous and healthy. The subject of fertilizing for quality is one that we can not take too seriously, one that deserves a great deal of our attention and one that I am sure is getting a great deal of study from all of us. There is of course, no standard fertilizer formula that may be employed in every grove. A certain treatment that might bring forth good results in one grove possibly would not do as well in another of a different locality. In fertilizing, we must ever keep quality of fruit before us. It is easy to give the right kind of fertilizer in amounts as to make a tree grow off vigorously, but it is also easy to fertilize a tree so heavily as to lower the quality of the fruit. Too much fertilizer lowers the quality, too little, in most cases, improves the quality of the fruit, but as is often the case, at the expense of the tree, for it reduces the vitality of the tree, and if followed up, will naturally interfere with the crops to come. It is, therefore, necessary for our pocketbook's sake, in fertilizing to endeavor to strike a happy medium. In fertilizing for quality there is another condition that I think that it might be well to mention and that is that we sometimes have drouths during the late summer and fall, to the extent that the trees are unable to take up the fertilizer that was applied in early summer, so that when it comes time to put down the fall application, we would do well to consider this fact and put on a lighter application than

otherwise. An over-dose at this time will show up later in the fruit on the trees, having a tendency to make the skin pebbly and rough, as well as retarding the maturity. Much has been said about fertilizers at our meetings, what fertilizers best to use, how and when to apply them and I do not think it necessary to enlarge upon this factor in fruit quality.

Spraying

Spraying is by no means a minor factor in the producing of good quality fruit. There is nothing that can lower the quality of fruit more successfully than a heavy infestation of either white fly, purple scale, rust mite or thrips, to say nothing of melanose, scab and other fungus diseases, all of which may be controlled by proper spraying. By proper spraying, I refer to the spraying being done in a very thorough manner at the opportune time. An orange or grapefruit affected with thrip marks, rust, melanose or citrus scab is an unsightly thing, even if the eating qualities are really good; while on the other hand, fruit infested with white fly and purple scale not only lose greatly in appearance, but are also totally lacking in flavor. It is not my purpose to tell how or when to spray, nor what materials to use. I can only say to produce first quality fruit these pests must be controlled and this can be done by spraying. By a careful study of Bulletin 30 of the Agricultural Extension Division of the University of Florida, we may select a spray schedule to fit our own peculiar needs, that when carried out faithfully , will practically eliminate our grove pests.

Pruning

There is not a great deal to be said about pruning as related to fruit quality. However, by keeping our trees in a good healthy condition, and by pruning out so far as is practicable all of the dead branches and twigs, we reduce greatly our source of infection and consequently will have less melanose.

FAULTY CITRUS CROP ESTIMATES COST GROWERS BIG SUMS GUMPRECHT ASSERTS

Continued from page 11

to secure by that time a reasonably accurate estimate and would also eliminate the severe government criticism of its methods, when as a matter of fact every experienced citrus grower will have to admit that an accurate estimate before October 1 is practically impossible. All reports at this time indicate that when due deduction is made for the usual waste, which will more or less continue for some time yet, that the actual marketing crop may not very much exceed that of last season."

Mr. Gumprecht will leave within a few days on an extensive Northern trip, and will cover most of the important distribution centers in the United States and Canada. He will also attend the convention of the Exchange salesmen at Buffalo, N. Y., next month, when a definite selling plan for the coming season will be mapped out. Mr. Gumprecht expects to return to Bradenton September 1, and says that all the Exchange packing houses will be in position to take care of all early fruit shipments.

PECAN SOILS

By G. H. Blackman

The pecan is native to the rich alluvial soils of the Mississippi River valley and its tributaries from and including the States of Kansas, Missouri, Illinois and Indiana south and the rivers of Texas. It is a heavy feeder and thrives best on fertile soils that are well supplied with organic matter and a constant moisture supply.

Most of the pecan orchards of Florida are planted on Norfolk and Orangeburg soils, with a few plantings on Bladen, Portsmouth and other series of soils. Soils to give maximum growth and production should be slightly acid. Soils that are too wet for field crops will also be too wet for pecans and the trees should not be planted on such soils. Failure or success depends very largely on the soils and location selected for the pecan orchard.

Well drained soils, having a loamy surface underlaid with a clay subsoil that will retain a constant moisture supply, and one that will permit proper root development at all times, give best results. Soils that are underlaid with a hardpan, stiff plastic clay, high water table or quicksand closer than six to eight feet below the surface of the ground are not desirable for pecan planting.

While the soils described are considered to be the ones best suited to pecans in Florida, there are orchards in the state making satisfactory growth and production on soils entirely different from those mentioned.

Pecans have been known to make a thrifty growth and bear heavily on white sand that had nothing but yellow sand underneath. And again they have been known to do well on soils with a high water table, sometimes within three feet of the surface. However, in this latter case, the land had been cultivated in such a way that the trees stood on high broad beds with deep dead furrows between that were open at all times to keep the water moving. But generally speaking, any soil will come nearer producing the desired results with pecans, if it has a good clay foundation and is well drained. As a rule it is not advisable to plant pecan trees on soils underlaid with a tight, non-porous, plastic clay, hardpan or a water table within four or five feet of the surface.

Pecans have the ability of adapting the root system to varying depths and types of soils, provided there is sufficient fertility and moisture to encourage shallow root development and this accounts for the fact that they are often found growing under conditions considered to be unfavorable to production.

Where trees fail to develop in the proper way and show signs of rosette and dieback, and if there is a sufficient amount of plant food in the soil for proper growth and development, it is almost certain that the trees are in the wrong location. However, it may be possible to correct the trouble by drainage, sub-soiling, etc., but if not it would not be advisable for the grower to go to the expense in an effort to bring the trees into a state of thrift and produciton, as the investment will not pay.

Often, prospective planters ask as to the advisability of using cut-over pine land in northern and western Florida for pecans. Some of the cut-over lands are alright but much of them are not and should not be planted. If the land does not meet the requirements as set down in a previous paragraph it should not be used.

Prospective pecan planters may examine their soil by making borings with a soil auger at different depths. When a soil auger is not to be had one can use a post hole digger to good advantage.

Cannas are used very much in the north for securing tropical effects but are even better in the South. They can be planted on almost any kind of soil, although they prefer a heavy type with plenty of moisture with plenty of sunlight. For this reason they are planted on the edges of lakes and along streams where they grow perfectly. Care should be taken to remove each matured stalk in order to allow young suckers to become blossoms.

THIEVES IN THE NIGHT

The sneak-thief of the garden is that shell-less, night-prowling snail generally known among horticulturists as the "slug".

Because he does his work only during the dark hours of night, because he has an almost insatiable appetite for tender, green shoots and buds and because he is always out of sight and nearly always out of reach during the daylight hours, the slug has been a difficult creature to cope with.

Recently, however, an amateur gardener in Virginia and another near Cape Town, South Africa, discovered an effective method of attack upon this pest which apparently thrives and plunders in the temperate and torrid zones all over the world. The gardener in South Africa and the gardener in Virginia both found that by using an electric hand flashlight, they could hunt down an entire colony of these troublesome snails at night, pluck them from the plants and kill them.

It is next to impossible to rid a garden of slugs during daylight hours. Slow of movement though they are, they always manage to hide away where they can't be reached while the sun is shining; for a slug exposed even for a few minutes to the direct rays of the sun, is a dead slug and his instinctive fear of sunlight makes him careful to select a deep crack in a wall, the under side of a boardwalk or some other cool and obscure place where sunlight and other enemies cannot reach him. A few hours after sunrise even the tell-tail trail of slime which he leaves in his slow journey, has been dried up by the sun and blown away by the wind, so daylight hunting for him is unsatisfactory.

This flashlight hunting for snails, however seems to work, covered with slime as the slug is, he glistens in the rays of the flashlight and betrays his position. He can't run for cover. He can't even get under way in less than about five minutes. Pluck him from his victim plant with gloved fingers, crush him to earth with your heel and that particular snail is no more.

Spuds Johnson says that he and Mrs. Johnson are sure going to Farmers' and Fruit Growers' Week at Gainesville, August 9-14, and they want to see lots of other farm men and women there. They expect to have a good time and learn something worth while.

THE CULTIVATION OF CITRUS FRUITS

By H. HAROLD HUME
Illustrated

The author of this manual is recognized throughout Florida and the Gulf Coast as an authority on citrus fruits, but his book is not confined to this region. Mr. Hume has been a teacher and investigator in the University of Florida, and is now a citrus-grower and nurseryman of large experience. This new book is founded on the author's "Citrus Fruits and Their Culture," long a standard treatment in its many editions. The present work, which is abundantly illustrated, considers the whole subject of the culture of oranges, kumquats, grapefruit, lemons and others, as varieties; land and location, propagating, planting, tilling, fertilizing, pruning, spraying, harvesting, shipping, and marketing. The author also discusses the botany of the group, history, breeding, insects, diseases, and related questions. This book promises to become the standard treatise for its field. Price $5.00.

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RADIO FOR FLORIDA GROWERS

Continued from page 8

which reports will be about 10 hours earlier than you could receive them by means of your daily morning paper. In case of any specially cold weather or other serious weather condition, undoubtedly special weather reports will be given over the air when and as they may be received. Some 3 years ago, I believe it was, I had received from the weather bureau in Jacksonville a report of impending frost in Florida. I sent out this report by wireless telegraphy from Jacksonville, and much to my surprise received a number of acknowledgements by telegram asking for further information. That is one of the curious things about radio. You can broadcast and never know who is listening or where they may be.

But to return to the immediate subject in hand, I believe that Florida growers and farmers have not taken advantage of the radio situation as has been done in other parts of the United States. I could give you 15 or 20 instances of middle western farmers who can scarcely farm efficiently or sell their produce efficiently unless they can keep in touch with the day's markets by radio. Charts and a careful analysis of the situation show that the greatest number of farmers in the United States are listening to the radio between 7:30 and 8:00 at night. The peak time comes just before 8:00 o'clock when there are more farmers listening than at any other time in the 24 hours. You of course understand that this means 7:30 in each local time belt.

You will also be interested to know that careful and tabulated statistics have shown that the most popular service to farmers is reports of the produce and stock markets. There are more growers and farmers who listen to that than anything else that is broadcast.

I know that this station will be very glad indeed to co-operate with all of the agriculaural interests as well as with the farm officials including the Agricultural Department Department of the State of Florida, the State Marketing Bureau and the various county agents. If there is any particular class of information that you are interested in that you would like to have broadcast, if you will make your wishes known by addressing such request to Station WDBO, I can assure you that the management of the Station will give it their prompt and careful attention.

One last word that to my mind is important. The farmers should realize that the information broadcast for their benefit is expensive to acquire and is furnished to them for nothing, and is a class of service they can obtain, without expense, in no other way that is known today.

UNIVERSITY OF CALIFORNIA OFFERS SUMMER SESSION COURSES IN SUBTROPICAL HORTICULTURE

By Robert W. Hodgson, Associate Professor of Subtropical Horticulture

For the purpose of furnishing high school agriculture teachers and college of agriculture students in California and elsewhere an opportunity to secure special training in subtropical horticulture in a region where the growing of subtropical fruits constitutes an industry of major importance, the College of Agriculture, University of California, is again planning to conduct a Summer Session in Subtropical Horticulture. The session will be held at the Citrus Experiment Station, Riverside, California, during the six weeks' period June 26 to August 7. Professor Robert W. Hodgson, Specialist in Subtropical Horticulture, will be in charge of the activity which is to be held in cooperation with the Divisions of Entomology and Plant Pathology of the Citrus Experiment Station.

The courses offered will consist of twelve units of Junior and Senior work yielding university credit and may be submitted toward the requirements for the Bachelor's or Master's degree in Agriculture. While in the main, the courses offered correspond with those given at Berkley by the Division of Subtropical Horticulture two are not available elsewhere, namely diseases of subtropical fruits, and insect pests of subtropical fruits. While designed primarily for university students and high school teachers, and therefore not intended as practical courses for fruit growers, this session will be open to interested auditors upon payment of the usual auditor's fee.

This will be the third summer session of this type held by the University of California, similar work having been offered in 1924 and 1925 with notable success. More than seventy students have enrolled in the previous sessions, of which approximately one-third registered from foreign countries or states other than California. It is expected that there will be a considerable increase in the number of foreign students and students from other states this year. A strong teaching staff has been organized to give the courses, including some of the most prominent specialists in the United States.

The courses to be offered are as follows:

S 101 The Citrus Fruits (4 units). Lectuers, laboratory work, and field studies of the science and practice of orange, lemon, and grapefruit culture.

S 107 Subtropical Fruits of Major Importance (other than Citrus). (4 units). A course dealing with the Vinifera grape, English walnut, fig and olive.

S 104 Diseases Affecting Subtropical Fruits. (2 units). The causes,

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diagnosis, and treatment of the principal diseases of subtropical fruits.

S 105 Insects Affecting Subtropical Fruits (2 units). The life history and methods of control of the insect enemies of subtropical fruits.

In addition to the major course dealing with citrus fruit culture, which has been a feature of past sessions, and two courses yielding two units of credit each dealing with the insect pests and diseases affecting subtropical fruits, a new course will be offered covering the major subtropical fruits of importance in California other than the citrus fruits. The fruits which will be considered in this course are the vinifera grape, to which California has more than 650,000 acres planted; the Persian or English walnut, with 110,000 acres; the fig with 55,000 acres; and the olive, with about 35,000 acres planted.

These fruits, together with the citrus fruits, constitute nearly two-thirds of the total fruit acreage in California and are responsible for approximately seventy-five per cent of the total return from the fruit crops of the state.

Believing that unusual conditions exist in Southern California for teaching the essential principles in the commercial culture of these fruits and feeling that students from other states as well as California would appreciate the opportunity to study their culture under Southern California environment led to the decision to offer ummer Sessions in this special field. Further information concerning the courses offered may be secured from the Dean of the College of Agriculture, University of California, Berkeley.

J. J. PARRISH BUYS PLANT EQUIPMENT

Announcement has been made that J. J. Parrish, leading fruit shipper of the Indian River section, has taken another step forward by arranging for the installation of complete new machinery at his Jay Jay packing plant, and also at the Brockett and Parrish packing plant located at Mims.

Mr. Parrish has just let the contract for this machinery to the Skinner Machinery Co., of Dunedin, which will begin at once the installation of new washers, dryers and polishers, which will include the new system called the Brogdex-Brogdite method of preparing fruit for the market.

In the new plant the fruit will pass through a sterilizing vat and from there will be washed with clean water and then receive a high polish on its way to the grading tables.

It is understood that the machinery for the Jay Jay plant and for the Brockett and Parrish plant at Mims will cost more than $12,000 when installed. Mr. Parrish believes in keeping up to date in the fruit business.

In addition to the new equipment there will be additions and alterations made at each plant.

BRIGGS TO BREVARD

Gainesville, Fla.—Appointment of W. R. Briggs as county agent in Brevard County is announced by the Agricultural Extension Division here. He will begin work at once, and will have headquarters at Cocoa.

Mr. Briggs was for years county agent in Lee County, with headquarters at Fort Myers, having resigned that place last winter. He is thoroughly familiar with county agent work.

Brevard County has been without an agent since the resignation in February of W. G. Wells.

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NEW MATERIAL FOR CITRUS FUMIGATION

Continued from page 6

periments it is a very important point in connection with citrus fumigation. In the tests in the fumigatorium no such relationship appears. The same amount of actual hydrocyanic acid, whether in the liquid or in the dust, must be put into a tight box in order to have the same

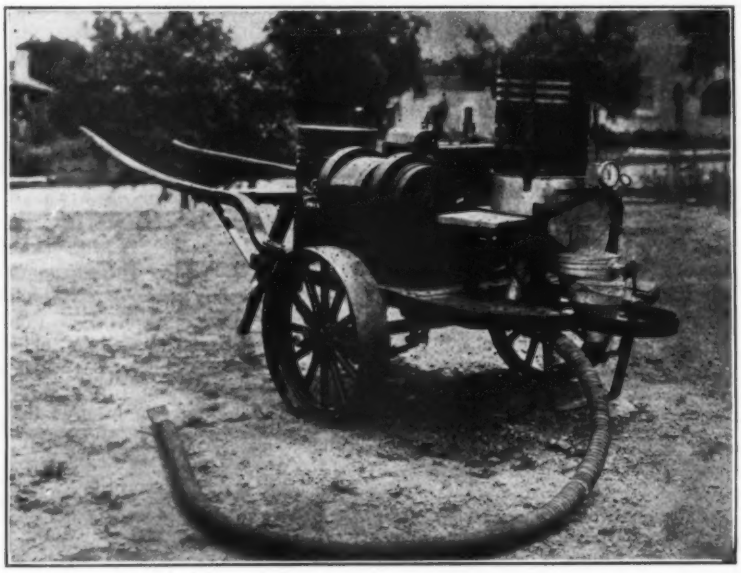

Figure 2—Power Duster Applicator

mean concentration within. This difference in the amount of gas recovered as between a tight box and a tent would indicate that leakage is the important factor. It has been noted also that a slight breeze causes a greater leakage of gas where liquid is the source than where dust is the source. If there is less leakage of gas through the tent and if there is less variability in the leakage where dust is the source, as our experiments seem to indicate, then the use of dust is a step in the right direction toward improving the most important single factor in citrus fumigation, namely leakage of gas through the tent.

Our tests to date indicate that with calcium cyanide made by combining liquid hydrocyanic acid with calcium cyanide made by combining liquid hydrocyanic acid with calcium carbide and containing 30 per cent cyanogen, one ounce is equal, so far as the killing of scale insects is concerned and also actual mean concentration of gas under a tented tree, to 20 cubic centimeters of liquid hydrocyanic acid of 96 per cent to 98 per cent purity. In other words, one ounce of this calcium cyanide corresponds to one unit in our present 110 per cent dosage schedule.

It will require more extensive use to determine a final schedule for dust fumigation. There may be a greater difference for instance between small and large trees with the use of the dust. In fact, if leakage, as pointed out, is greater in the case of liquid HCN, there would be relatively greater leakage with small trees. However the dials on the machines used for applying the dust furnish for the present a working dosage schedule which can be revised as further experience indicates.

If hydrocyanic acid can be satisfactorily applied in the form of a dust in citrus fumigation it is in the line of development of the fumigation process. The important question of safety in the handling and transporting of hydrocyanic acid is at once settled. The distribution of gas under the trees is no longer a problem because the dust particles carrying the gas can be thoroughly distributed by a proper blower. The changing from cold to hot gas machines as is now the case would be avoided. There are indications that the margin of safety between the killing of the insects and injury to the tree is greater with the use of this new material. The injury to the portion of the tree where the liquid strikes the foliage is also avoided with the use of the dust.

Only a few of the more important facts relating to the practical use of this new fumigant are given in this article. Further details and additional data will be published by the citrus experiment station at a later date.

The number of milk cows in Vermont exceeds the human population of the state. Over the United States as a whole, there is an average of one milk cow for every four persons.

Farm women will find many things of interest and value to them on the home economics program of Farmers' and Fruit Growers' Week at the College of Agriculture, Gainesville, August 9-14, 1926.

FIFTH ANNUAL

Farmers' and Fruit Growers' Week

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Keep up with developments in Florida's agriculture and take a vacation at the same time. Come over for the entire week.

Room and board may be had in the College dormitories at $1.40 per day, if visitors will provide their own linen, pillows, and towels. Accomodations may be had in Gainesville at reasonable rates.

Make Reservations in Advance

For further information see your County Agent, Home Demonstration Agent, Plant Board Inspector, or write the College of Agriculture.

A. A. MURPHREE, President
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Spray for Scale Following Melanose Spraying

By W. W. Yothers

In as much as the Florida citrus grower has been told every year for six or seven years past that scale insects and rust mites usually become much more abundant following spring applications of oil emulsion than would otheriwse be the case, it was thought unnecessary to again issue a sort of warning regarding this matter. My attention however has been called to the importance of this situation and even at this late date it seems advisable to caution citrus growers to be on the lookout for an undue infestation of rust mites and scales.

It is generally and almost universally known that melanose is a fungus disease and to prevent it the use of Bordeaux is necessary as a spray. The oil is added at the same time to kill scale insects and white flies. In preventing the melanose the Bordeaux also inhibits the normal development of entomogenous or beneficial fungi which are prevalent in the citrus groves in this state. Without these natural checks most insects on citrus trees become very abundant. While it is true that in some instances these pests do not become abundant until very late in the summer or until late in the Fall, we strongly advise every citrus grower who has sprayed for melanose to be on the lookout for rust mite and scale insects. If they get abundant an application of oil emulsion should be given. Soda sulphur may be combined with the oil emulsion if rust mites are present. In fact it is considered good grove practice to spray all such plantings with oil emulsion sometime about the last week in June or the first week in July. This is the time when scale insects are hatching and a large proportion of them can be killed very easily.

SATSUMA GROWERS WILL MARKET BLEMISHED FRUIT FOR SATSU-MADE

Gainesville, Fla.—Satsuma growers of western Florida are planning to market some of their satsumas this season through the "satsu-made" channel, according to J. Lee Smith, district agent, who has just returned from a trip into the satsuma section. "Satsu-made is a drink very similar to limeade and lemonade and is refreshing, invigorating and cooling," says Mr. Smith. "It is made from the fresh satsumas and dispensed at cold drink stands.

"The satsumas are ripe some time before they are well colored, and it is in this stage that they make this wonderful drink.

"The satsuma is subject to scab and other blemishes, the same as other citrus fruits. This scabby and blemished fruit will be picked early by the growers and supplied to the soft drink stands to be used in satsu-made. This will take part of the burden off of the trees and the perfect fruit will develop better. It will also have the advantage of keeping this rough and unsightly fruit off of the fresh fruit markets."

It's always fair weather when good folks get together at Farmers' and Fruit Growers' Week. Place: College of Agriculture, Gainesville. Date: August 9-14, 1926.

LYONS FERTILIZER CO. ORANGE BELT BRANDS TAMPA, FLORIDA

BETTER FRUIT === BETTER TREES

Can only result from proper attention to tree and soil. We have said and will continue to say

ORANGE BELT BRANDS

will make a difference in the appearance of your trees and in the quality of your fruit.

LYONS FERTILIZER COMPANY

Citrus Exchange Bldg.

Tampa, Florida

"QUALITY FERTILIZER for QUALITY FRUIT"

FIFTH ANNUAL FARMERS' AND FRUIT GOWERS' WEEK

Continued from page 5

RICULTURE, Gainesville, in advance.

Some Things To Be Seen At Farmers Week

The College of Agriculture Building will be headquarters for Farmers' Week. Laboratories and classrooms will be open for inspection and use by visitors.

The Experiment Station building is near the College building. It contains the offices and laboratories of Experiment Station and Extension workers, collections of insects, specimens of plant diseases and other things of interest.

The grass plots and horticultural grounds and greenhouses of the Station will be of interest to visitors. Hedges, grapes, citrus, flowers and shrubs will be seen on the horticultural grounds.

The dairy herd is one of the finest in the state, and production results are being obtained that are practical and applicable to dairying in other parts of the state. Visitors should see the herd.

The Florida State Museum, located in Science Hall, should be viewed by every visitor to Farmers' Week. Very interesting and rare specimens of birds, beasts and numerous other things of interest will be found there. It is open every day and free.

The University has a fine new library building, a new auditorium building, and a splendid new pipe organ which has been installed for about a year.

Other buildings of interest are the dormitories, the Commons, the College of Law, the College of Engineering, Teachers College and Language Hall.

The College of Agriculture

The College of Agriculture is composed of the Teaching Division, the Extension Division, and the Experiment Station.

The Teaching Division of the College of Agriculture consists of the Department of Agronomy (Farm Crops and Soils) and Farm Management, the Department of Animal Husbandry, the Department of Agricultural Engineering, the Department of Horticulture, and the Department of Veterinary Science.

The Experiment Station is composed of the Departments of Animal Industry and Dairying, Chemistry, Grass and Forage Crops, Agricultural and Home Economics (farm and home management), Plant Pathology (studying plant diseases), Entomology (studying insects), Cotton Investigations, Horticulture and Pecan Investigations, and Veterinary Science. The Station has its own library. The Experiment Station has branches at Lake Alfred for the study of citrus problems, at Quincy for the study of tobacco problems, and at Belle Glade for the study of agriculture in the Everglades. Laboratories and offices are maintained at Hastings for the study of potatoes, at Cocoa for the study of citrus blight, at Miami and Bradenton for the study of tomato diseases. Experiments are conducted out of the Gainesville office in cooperation with county agents and growers in every section of the state.

The Agricultural Extension Service supervises county agent work and, in cooperation with the State Home Demonstration Department at Tallahassee, home demonstration work. This division has offices in the Experiment Station building.

STATE PLANT BOARD HAS WHITEFLY FUNGUS NOW READY FOR DISTRIBUTION

Gainesville, Fla.—The Entomology Department of the State Plant Board announces that it again has a fine lot of whitefly fungus, principally the Red Aschersonia, available for distribution. As the older citrus growers of the state well know, this fungus, when applied during the period of summer rains, is very effective in checking the development of the common whitefly and cloudy-winged whitefly of citrus. Growers requesting fungus are urged to send a few dozen leaves for examination and recommendation. The price is now $1 per culture, with directions, and transportation charges prepaid by the Board.

A culture consists of the amount of fungus that can conveniently be grown in a pint wide-mouth bottle and is sufficient for about an acre of trees.

A few dozen cultures of the Yellow Aschersonia, useful only against the cloudy-winged whitefly, are also available and will be included in shipments going into localities infested by this whitefly.

A few dozen cultures of the Cuban Aschersonia, useful in the control of the pyriform scale infesting guava and some other plants, are also available.

Since methods for the artificial growing of the brown whitefly fungus have not been developed, cultures of this fungus are not available.

RUST MITES

Now present in many groves. Are you prepared to take prompt Control Measures for the protection of your fruit? This insect multiplies and spreads with great rapidity and the damage is quickly done.

SCHNARRS NO. 1 SUPERFINE DUSTING SULPHUR

An effective and economical remedy. Or, if you prefer spraying—

SCHNARRS HIGH TEST LIME SULPHUR SOLUTION

will give results. If scale is to be considered in addition to Rust Mites

SCHNARRS OIL AND SULPHUR MIXTURE

will get them both. Our several locations insure quick deliveries. Also a full line of HAND and POWER SPRAYERS and DUSTERS immediately available together with all ACCESSORIES and INSECTICIDE MATERIALS.

Send for copy of our Combined Catalogue, Spraying and Dusting Schedule.

J. SCHNARR & CO.

Manufacturers of

Florida's Standard Oldest Line of Sprays

Schnarrs Standard Dust Mixtures

Orlando Winter Haven

Papaya, Cultivation

PAPAYA CULTURE

By Harold Mowry

The papaya (Carica papaya) is successfully grown throughout most of southern Florida but, owing to its susceptibility to frost injury, cannot be grown in the northern half of the state. Hammock soils are probably best, but with fertilization the plant can be grown on nearly all well-drained soils. Named varieties are not being grown at present in Florida, all being seedling trees.

The tree is easily propagated by seeds. Cuttings can be rooted and grafting has been found possible. Seeds can be rooted and grafting has been found possible. Seeds should be planted in a well-drained seedbed as soon as obtainable in early winter. Only those seeds from trees which are known to bear large, good quality fruits should be planted. They should be covered lightly with soil and not allowed to become dried out after being planted. Such seed under normal conditions should germinate within three weeks. When seedlings have attained a height of 6 to 12 incehs they may be transplanted, with a ball of earth about roots, to permanent location, shading for a few days if weather is hot. In transplanting and while plants are small, watering should not be neglected. These seedlings, if given proper care and attention, should bear fruit the following season.

Planting distances should be from 10 to 12 feet. The tree is normally dioecious (male and female flowers borne on separate plants) and only one staminate (male) tree is required for at least 10 pistillate trees to insure adequate cross-pollination. Inasmuch as it is not possible to determine sex of young seedlings until they bloom it is advisable to plant three or four of the young plants, about a foot apart, at each hill of the permanent planting. As soon as flowers appear all of staminate flowering trees—except one for every 19 pistillate—should be removed, leaving but one plant to the hill. The staminates bear no fruit but without pollination from them neither will the pistillates.

The tree itself is short lived, bearing profitably from three to five years only. If plantings are to be continued it is advisable to replant with new trees by the end of the fourth year. Organic fertilizers, such as manures, have given good results. Little cultivation is necessary but weed growth should be kept under control.

The season of ripening extends mainly from December to June.

The principal insects and diseases of the papaya are the papaya fruit fly, papaya leaf-spot and nematodes (root-knot). All dropped fruits should be immediately destroyed to help check the fruit fly. Leaf spotting can be kept under control by spraying with a 4-4-50 Bordeaux spray. If young seedlings are grown in a seedbed free of root-knot this pest does not ordinarily cause much

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One of the most striking winter-flowering plants is the Poinsettia. This plant is hardy throughout Florida and is very commonly used. On account of its striking red bracts, it is seldom used with any other plant for cutting purposes. The Poinsettia looks best planted in the rear of heavy borders of green plants as the plants loose their green leaves which leaves glaring scarlet bracts.

Another flowering plant that does exceptionally well on sandy soil is the Allamanda. This plant quickly recovers from frost in a few weeks and blooms very profilic during the summer. This plant requires but little care and should be used where mass is desired.

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We welcome the account and business of responsible individuals, firms, corporations and banks.

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Exchange National Bank

TAMPA, FLORIDA

DR. FAWCETT'S NEW CITRUS BOOK

The Citrus Industry recently made mention of Dr. Howard S. Fawcett's new citrus book, entitled "Citrus Diseases and Their Control." This book is now obtainable through the Lemon Men's Club, Box 530, Station C, Los Angeles, Cal., and may be had prior to June first at $4 per copy.

Contains 500 pages covering the Citrus Diseases in all countries of the world where Citrus is grown.

Contains 15 full sized colored plates illustrating about 25 of the most important diseases of fruit and trees.

Contains 141 half-tone engravings and 49 drawings.

All diseases of Citrus are described in clear-cut non-technical language, as well as illustrated as explained above.

For each important disease—

a. History and distribution.

b. Symptoms and description.

c. The casual agent.

d. The contributing conditions.

e. Control (prevention and treatment).

Oriental Diseases of Citrus have been treated of and the text written by H. Atherton Lee, widely experienced in the Philippines, the Hawaiian Islands, and the principal countries of the Orient.

The authors in the preface, say: "We have attempted to present in this book a complete discussion of all present information on Citrus Diseases occurring in all parts of the world. The need for such a publication has been brought frequently to our attention by growers and students interested in citrus culture.

"It is hoped that this book may serve not only as a guide to growers in the identification of diseases, diagnosis as to their causes, and application of control measures insofar as they are known, but also serve as a source of information to students and investigators."

The Lemon Men's Club had such faith in this book that it advanced $1,000 in cash to enable Dr. Fawcell to have the 15 colored plates instead of only 5 as at first planned. The Club also contracted to sell for the publishers 2,000 copies of the book to growers, packing-house men, citrus salesmen, and others.

And the Lemon Men's Club did this because it believes every orange grower, lemon grower, and other citrus grower should have a copy.

The best fertilizer for asparagus plumosis ferns seem to be of organic source, castor pomace being of the best. Good results are secured from straight chemicals, nitrate of soda, acid phosphate and sulphuate of potash.

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60 pages of vital business facts and figures. Who, where and how many your prospects are.
5,000 lines of business covered. Compiled by the Largest Directory Publishers in the world, thru information obtained by actual door-to-door canvass.
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CLASSIFIED ADVERTISEMENTS

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we connot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

REAL ESTATE

WILL EXCHANGE West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 3410 McKinley Ave., ElPaso, Texas.

FIVE ACRES and a town lot, all for $700.00 Biggest bargain in Florida. Certain money maker. We want reliable salesmen to present this meritorious proposition to investors. Sumter Gardens and Bushnell Park lots. Every purchaser highly pleased. Florida Garden Land Company, Box 1759, St. Petersburg, Florida.

"BOOK OF TRUTH"
For planters of new groves
Is yours for the asking,
Write Today.
OCKLAWAHA NURSERIES INC.
"Pedigreed Citrus Trees"
Lake Jem, Florida

FOR SALE CHEAP—Eleven acres high, rooly citrus land: 4 acres cleared with small house, and large nice bearing orange trees full of fruit. Nicely located near Altamonte Springs, Fla. For particulars write H. A. Lunquire, 41 N. W. 29th St., Miami, Fla.

WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY. ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.

SATSUMA BUDWOOD from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

For Sale—Pineapple land in winterless Florida. $15 an acre. Almont Ake. Venus Fla:

MISCELLANEOUS

ADVERTISING RESEARCH WANTED: Specialist in foods and nutrition, drugs, disinfectants, and insect control. Successful record in copy work and syndicate writing. Desire assignments in fruit products. Can introduce new facts and put new punch into educational advertising. Mrs Susa P. Moore, P. O. Box 523, Chicago.

FOR SALE—Dairy and stable manure, car lots. Link & Bagley, Box 464, Tampa Florida. 6t

WHITE WYANDOTT Cockrels, regal strain—the best in the country, direct from Martin pens. Utility and show birds $5.00 each; also eggs for hatching $5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Florida.

REPOSSESSED player piano may be purchased for small unpaid balance by reliable parties on easy payments. We guarantee this player to be in excellent condition and a very unusual buy. Plenty of good rolls and bench included. M. L. Price Music Co., Tampa & Zack St., Tampa.

SOUTHDOWN SHEEP, White Rocks, Toulouse Geese, Guineas, Angora and Milk Goats, Circular free. Woodburn, Clifton, Va.

FOR SALE
Remington Portable Typewriter with standard keyboard. Has all advantages of larger machine. Ideal for farm and home use. $60. cash or sold on easy terms. Remington Typewriter Co., 103 Parker St., Tampa Florida.

FARM—GROVE—HOME
22 acres large bearing grove; modern two-story, 8 room house, completely furnished on third largest lake in state in thriving town; good roads, church, school; complete line farm implements and tools. P. F. Cloonan, Yalaha, Lake County, Florida.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Florida.

Laredo soy beans, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

MILLION Porto Rico Potato Plants, $2.50-1000. W. W. WILLIAMS, QUITMAN, GA.

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FARMER AGENTS: Make $25.00 weekly selling Comet Sprayers. Profitable winter employment. You take orders. We deliver and collect. Commissions weekly. Established 35 years. Particulars free. Rusler Co., Box C-18, Johnstown, Ohio.

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